

REMARKS

Review and reconsideration on the merits are requested.

Two telephone interview were conducted with the Examiner on February 22, 2010 regarding the amendments to the claims.

The Examiner stated that she would not find a new issue after final to be presented.

The Examiner also stated that in light of the PRELIMINARY AMENDMENT using 540 mT in the claims would not be new matter.

Claim Amendments

Claims 2 and 14 are incorporated to claim 1. Although the composition recited in the amended claim 1 overlaps with that of **Takagawa** at 68% by mol of Fe_2O_3 and 12% by mol of ZnO, amended claim 1 distinguishes **Takagawa** by reciting a very high maximum magnetic flux density, i.e., or 540 mT or more measured at 100°C in a magnetic field of 1000 A/m. With respect to support for 540 mT, see the PRELIMINARY AMENDMENT of June 23, 2006.

Claim 7 is amended in a manner similar to claim 1 and further amended to add sintering at a temperature range of 1150-1250°C, which also overlaps with that of **Takagawa** at 1250°C. Support for “a temperature range of 1150-1250°C can be found at page 16, lines 7-8, in the specification.

Claims 2, 10, 12, 14 and 15 are canceled.

Claim Rejections - 35 U.S.C. § 112, First Paragraph

Claim 14 is rejected under the above section the Examiner finding that the original disclosure teaches that the sintered ferrite body of claim 2 which contains 68-75 mol% Fe_2O_3 has a maximum magnetic flux density at 100°C and 1 kA/m of 490 mT or more, citing paragraph [0032].

A telephone call to the Examiner was made on this point since Applicants had amended “490” to --540-- in the Preliminary Amendment of June 23, 2006.

The Examiner indicated that that amendment had been entered and supported --540--.

The Prior Art

WO 2004/063117, treating U.S. 7,481,946 Takagawa et al (Takagawa) as a translation; JP 06-290926 (JP ‘926).

The Examiner’s position on the prior art is set forth in the Action and will not be repeated here except as necessary to an understanding of Applicants’ traversal which is now presented.

Obviousness Rejection

Claims 1-15 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Takagawa in view of JP ‘926.

Amended claim 1 calls for compositions of a relatively higher mol% of Fe_2O_3 as compared with Takagawa and contains the distinguishing limitation of a maximum magnetic flux density of or 540 mT or more measured at 100°C in a magnetic field of 1000 A/m. “540 mT or more” is not obtained following the teaching of Takagawa, in which the maximum value shown in 523 mT (see Sample No. 22).

This extremely high maximum magnetic flux density results from using an oxygen concentration of 0.1% or less by volume in the atmosphere from the binder-removing step to the completion of the sintering step at a temperature range of 1150-1250°C.

The Examiner may consider the process from the binder-removing step to the completion of the sintering step of the present invention as processes of “Temperature Increasing Process (I)” and “Temperature Retention Process (II)” of Takagawa (see col. 12, line 21-col. 13, line 9 of US ‘946). However, Takagawa discloses that the partial pressure of oxygen is 4.0% or less,

preferably 3.0% or less and more preferably 2.5% or less in the temperature increasing process (I).

In distinction, in accordance with the present invention, however, it is 0.1% or less, which is quite different in the sense of an oxidizing/reducing reaction from that of Takagawa.

The ratio of Fe^{2+} varies depending on the reducing reaction which is influenced by controlling the oxygen concentration to 0.1% or less by volume in the atmosphere reducing reaction, i.e., an oxygen-removing reaction which is indispensable for the spinelization is closely related to the residual amount of the binder, in particularly for a ferrite body containing much excess Fe as compared with a conventional Mn-Zn ferrites. See page 14, line 23-page 15, line 6 in the specification. Specifically, an incomplete binder-removing step, which is conducted by the control of oxygen concentration of 0.1% or less, is essential for the preferable spinelization.

It is considered that in Takagawa the oxygen concentration of the sintering step is much more important than that of the binder-removing step. It would not have been obvious for a person having ordinary skill in the art to control oxygen concentration of the binder-removing step as low as that of the sintering step in view of Takagawa. Considering such background, it is apparent that the oxygen concentration of 0.1% or less is a patentable feature distinguished from 2.5% or less.

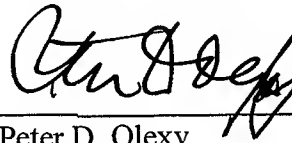
The sintering temperature is also important. In the case that a higher sintering temperature as in Takagawa is applied to the ferrite body according to the present invention, which has a composition of higher mol% of Fe_2O_3 , a coarser grain size is obtained, resulting in inferior properties.

Withdrawal is requested.

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

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